MIAMI-DADE COUNTY
DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786) 315-2590 F (786) 315-2599
www.miamidade.gov/economy

NOTICE OF ACCEPTANCE (NOA)

Shutter Tech, Inc.
7485 West 2nd Court
Hialeah, Florida 33014

SCOPE:
This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER- Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Maximum Impact 0.031" (min.) Steel Storm Panels Shutter

APPROVAL DOCUMENT: Drawing No. 98001, titled "Maximum Impact .031 Steel Storm Panel", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated September 29, 2015, signed and sealed by Robert S. Monsour, P.E., bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number & expiration date by Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

LABELING: Each panel shall bear a permanent label with the manufacturer's name or logo, city, state, the following statement: "Miami-Dade County Product Control Approved", and NOA number, per TAS-201, TAS-202, and TAS-203, unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA **revises NOA # 14-0127.02** and consists of this page 1, evidence submitted pages E-1, E-2, E-3, E-4, E-5 & E-6 as well as approval document mentioned above.
The submitted documentation was reviewed by **Helmy A. Makar, P.E., M.S.**

MIAMI-DADE COUNTY APPROVED

10/15/2015

NOA No. 15 -0714.23
Expiration Date: 03/22/2017
Approval Date: 10/15/2015

Shutter Tech, Inc.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #98-0304.03

A. DRAWINGS:

1. *Drawing No. 98001, titled "24 ga. maximum impact storm panel", prepared by Ramms Engineering, Inc., dated January 10, 1998, last revised on August 14, 1998, sheets 1 through 7 of 7, signed and sealed by Robert S. Monsour, P.E.*

B. TESTS:

1. *Test report on Large Missile Impact Test, Cyclic Wind Pressure Test and Uniform Static Air Pressure Test of a 24 ga. steel storm panels, prepared by Construction Testing Corporation, Report No. 98-003, dated 02/27/98, signed and sealed by Christopher G. Tyson, P.E.*
2. *Test report on Large Missile Impact Test, Cyclic Wind Pressure Test and Uniform Static Air Pressure Test of aluminum storm panels, prepared by Construction Testing Corporation, Report No. 98-005, dated 05/21/98, signed and sealed by Christopher G. Tyson, P.E.*

C. CACULATIONS:

1. *Comparative Analysis, dated February 18, 1998, pages 1 through 4, prepared by Ramms Engineering, Inc., signed and sealed by Robert S. Monsour, P.E.*
2. *Revised calculations for Comparative Analysis and Anchor Spacing Analysis, dated June 4, 1998, pages 1 through 49, prepared by Ramms Engineering, Inc., signed and sealed by Robert S. Monsour, P.E.*
3. *Revised calculations for Anchor Spacing Analysis, dated August 3, 1998, pages 1 through 35, prepared by Ramms Engineering, Inc., signed and sealed by Robert S. Monsour, P.E.*
4. *Revised calculations for Anchor Spacing Analysis, dated September 1, 1998, pages 1 through 94, prepared by Ramms Engineering, Inc., signed and sealed by Robert S. Monsour, P.E.*

D. MATERIAL CERTIFICATION:

1. *Mill Certified Inspection Report dated December 10, 1997, prepared by Kieh Co., for steel panel.*
2. *Certified Tensile Test Report by Certified Testing Laboratories, Report No. CTL-076D, dated 02/04/98, signed and sealed by Ramesh Patel, P.E.*

Helmy A. Makar, P.E., M.S.
Product Control Section Supervisor
NOA No. 15 -0714.23
Expiration Date: 03/22/2017
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NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

2. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #00-1207.03

A. DRAWINGS:

1. *Drawing No. 98001, titled "24 ga. maximum impact storm panel", prepared by Ramms Engineering, Inc., dated January 10, 1998, last revised on December 15, 2000, sheets 1 and 5 of 7, August 14, 1998, sheets 2, 3, 6, and 7 of 7, and on December 4, 2000, sheet 4 of 7, all signed and sealed by Robert S. Monsour, P.E. on December 22, 2000.*

B. TESTS:

1. *None.*

C. CACULATIONS:

1. *None.*

D. MATERIAL CERTIFICATION:

1. *None.*

3. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #01-0205.01

A. DRAWINGS:

1. *Drawing No. 98001, titled "24 ga. maximum impact storm panel", prepared by Ramms Engineering, Inc., dated January 10, 1998, last revised on January 17, 2001, signed and sealed by Robert S. Monsour, P.E. on January 29, 2001.*

B. TESTS:

1. *None.*

C. CACULATIONS:

1. *None.*

D. MATERIAL CERTIFICATION:

1. *None.*

4. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 01-1224.07

A. DRAWINGS

1. *Drawing No. 98001, titled " Maximum Impact Storm Panel ", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated September 09, 2002 signed and sealed by Robert S. Monsour, P.E.*

Helmy A. Makar, P.E., M.S.
Product Control Section Supervisor
NOA No. 15 -0714.23
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B. TESTS

1. *Test reports on Large Missile Impact Test per SFBC, PA 201-94 along with installation diagram of Steel Storm Panel Shutter, prepared by American Test Lab of South Florida, Test Report No. 0 502.02-02, dated May 09, 2002, signed and sealed by William R. Mehner, P.E.*
2. *Addendum to Test reports on Large Missile Impact Test per SFBC, PA 201-94 of Steel Storm Panel Shutter, prepared by American Test Lab of South Florida, Test Report No. 0 502.02-02, dated July 09, 2002, signed and sealed by William R. Mehner, P.E.*

C. CALCULATIONS

1. *Comparative analysis, prepared by prepared by Ramms Engineering, Inc., dated January 14, 2002, signed and sealed by Robert S. Monsour, P.E.*

D. MATERIAL CERTIFICATIONS

1. *None.*

5. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 06-0110.04

A. DRAWINGS

1. *Drawing No. 98001, titled " Maximum Impact Storm Panel ", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated January 06, 2006, signed and sealed by Robert S. Monsour, P.E.*

B. TESTS

1. *None.*

C. CALCULATIONS

1. *Revised calculations for Anchor Spacing Analysis, dated January 06, 2006, 88 pages, prepared by Ramms Engineering, Inc., signed and sealed by Robert S. Monsour, P.E.*

D. QUALITY ASSURANCE

1. *By Miami-Dade County Building Code Compliance Office.*

E. MATERIAL CERTIFICATIONS

1. *None.*

Helmy A. Makar, P.E., M.S.
Product Control Section Supervisor
NOA No. 15 -0714.23
Expiration Date: 03/22/2017
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NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

6. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #11-0304.01

A. DRAWINGS

1. Drawing No. 98001, titled " Maximum Impact Storm Panel ", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated January 06, 2006, signed and sealed by Robert S. Monsour, P.E.

B. TESTS

1. None. One year renewal to give manufacturer time to submit a verification test report.

C. CALCULATIONS

1. None.

D. QUALITY ASSURANCE

1. By Miami-Dade County Building and Neighborhood Compliance Department (BNC).

E. MATERIAL CERTIFICATIONS

1. None.

F. OTHERS

1. Conformance letter from Ramms Engineering, Inc., dated March 24, 2011, certifying compliance with the Florida Building Code, 2007 Edition, singed and sealed by Robert S. Monsour, P.E.

7. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 12-0320.26

A. DRAWINGS

1. Drawing No. 98001, titled " Maximum Impact Storm Panel ", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated January 06, 2006, signed and sealed by Robert S. Monsour, P.E.

B. TESTS

1. Test report on Large Missile Impact Test, Cyclic Wind Pressure Test and Uniform Static Air Pressure Test of a 24 ga. steel storm panels, prepared by Blackwater Testing, Inc., Report No. AG-11-001, dated 03/12/12, signed and sealed by yamil G. Kuri, P.E.

Hemy A. Makar, P.E., M.S.
Product Control Section Supervisor
NOA No. 15 -0714.23
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NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

C. CALCULATIONS
1. None.

D. QUALITY ASSURANCE
1. By Miami-Dade County Department of Permitting, Environment, and Regulatory Affairs (PERA).

E. MATERIAL CERTIFICATIONS
1. Certified report of Chemical Analysis and mechanical tests by The techs.

F. OTHERS
1. Conformance letter from Ramms Engineering, Inc., dated March 20, 2012, certifying compliance with the Florida Building Code, 2010 Edition, singed and sealed by Robert S. Monsour, P.E.

8. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 14-0127.02

A. DRAWINGS
1. Drawing No. 98001, titled "Maximum Impact .031 Steel Storm Panel", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated January 16, 2014, signed and sealed by Robert S. Monsour, P.E.

B. TESTS
1. None.

C. CALCULATIONS
1. None.

D. QUALITY ASSURANCE
1. By Miami-Dade County Department of Regulatory and Economic Resorces.

E. MATERIAL CERTIFICATIONS
1. None.

F. OTHERS
1. Asset Purchase Agreement.

Hetmy A. Makar, P.E., M.S.
Product Control Section Supervisor
NOA No. 15 -0714.23
Expiration Date: 03/22/2017
Approval Date: 10/15/2015

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

9. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. *Drawing No. 98001, titled "Maximum Impact .031 Steel Storm Panel", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated September 29, 2015, signed and sealed by Robert S. Monsour, P.E.*

B. TESTS

1. *None.*

C. CALCULATIONS

1. *None.*

D. QUALITY ASSURANCE

1. *By Miami-Dade County Department of Regulatory and Economic Resources.*

E. MATERIAL CERTIFICATIONS

1. *None.*

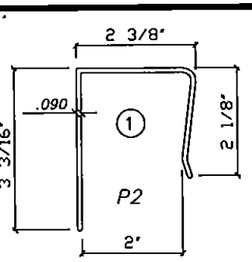
F. OTHERS

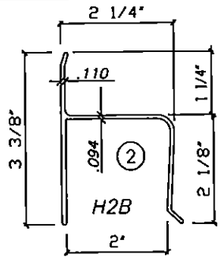
1. *FBC, 2014 Edition compliance letter prepared by Ramms Engineering, Inc., dated June 26, 2015, signed & sealed by Robert Monsour, P.E.*

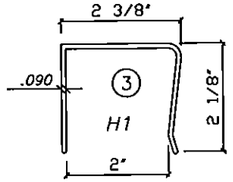
Helmy A. Makar, P.E., M.S.
Product Control Section Supervisor
NOA No. 15 -0714.23
Expiration Date: 03/22/2017
Approval Date: 10/15/2015

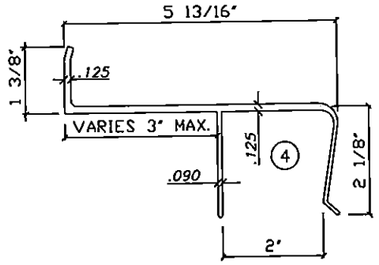
24GA .031 (H.V.H.Z.)

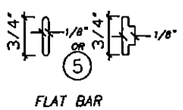
MAXIMUM IMPACT STORM PANEL

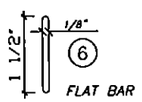


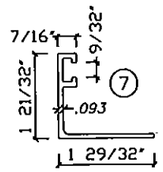


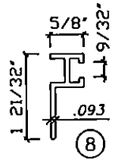


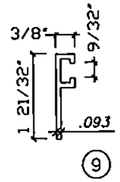


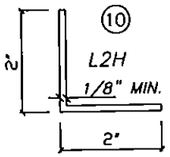


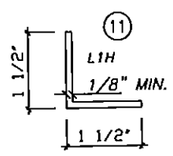




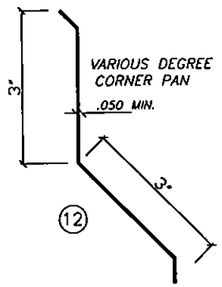


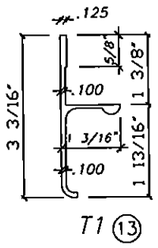






VARIOUS TYPES OF F-TRACK NOT SHOWN





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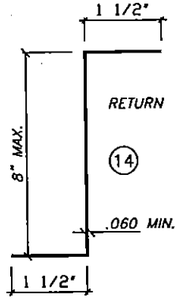
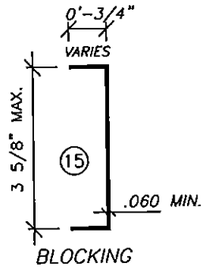
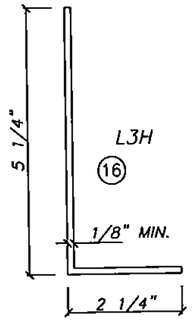
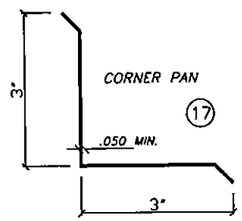
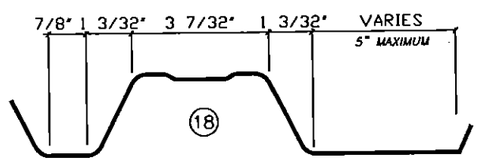




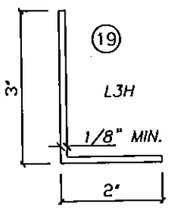
BLOCKING

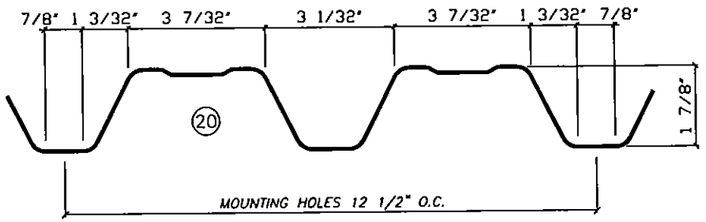




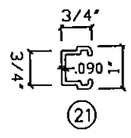


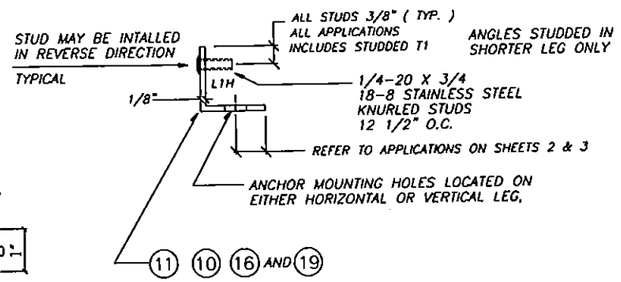
SPECIAL NET PANEL SECTION





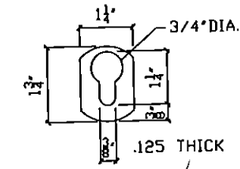
CROSS SECTIONS





STUDDED ANGLE DETAIL

1/8" x 1 1/2" FLAT STUDDED STRAP MAY BE USED IN PLACE OF ANGLE



KEY HOLE WASHER

COMPLIES WITH:

FLORIDA BUILDING CODE FIFTH EDITION (2014) (H.V.H.Z.)
TESTED TO TAS201, TAS202 AND TAS203

DESIGN CRITERIA:

WIND LOADS TO BE CALCULATED AS PER ASCE 7-10

NO INCRESE IN ALLOWABLE STRESS WAS USED IN THE DESIGN OF THIS PRODUCT

GENERAL NOTES:

ALL ALUMINUM EXTRUSIONS TO BE ALLOY 6063-T6 OR EQUAL

STORM PANELS SHALL BE:
24 GAUGE STEEL, ASTM A653 SQ GRADE E MIN. Fy = 90 K.S.I. MINIMUM VALUE
WITH .031 MINIMUM THICKNESS
HOT DIP COATED. WITH A NOMINAL WIDTH OF 12 1/2"

THE STORM PANEL SHUTTER MAY BE INSTALLED VERTICALLY OR HORIZONTALLY, IN ACCORDANCE TO THE DETAILED SPECIFICATIONS HEREIN.

PANELS MAY BE NOTCHED OR MITERED TO ACCOMMODATE AN OBSTRUCTION
PANELS MAY HAVE A RIPPLED SURE GRIP OR A HEMMED EDGE

ANCHORAGE OF THE SHUTTER SYSTEM TO CONCRETE OR MASONRY SHALL CONSIST OF THE FOLLOWING OR EQUAL WITH MINIMUM ULTIMATE LOAD VALUES SHOWN

1/4" DIA. RAWL LOK/BOLT ANCHOR (SLEEVED DRIVE ANCHOR)
MIN. TENSILE 1190 - MIN. SHEAR 1520 - 1 1/8" MIN. EMBED. IN CONCRETE
MIN. TENSILE 1200 - MIN. SHEAR 1270 - 1 1/8" MIN. EMBED. IN MASONRY
1/4-20 RAWL CALK-IN ANCHOR (MACHINE SCREW ANCHOR) WITH 1/4-20 BOLTS
MIN. TENSILE 1870 - MIN. SHEAR 1730 - 7/8" MIN. EMBED. IN CONCRETE
MIN. TENSILE 880 - MIN. SHEAR 1340 - 7/8" MIN. EMBED. IN MASONRY
1/4" PERMA-SEAL TAPPER BY RAWL (MASONRY SCREWS VARIOUS HEAD TYPES)
MIN. TENSILE 1520 - MIN. SHEAR 1980 - 1 1/2" MEN. EMBED. IN CONCRETE
MIN. TENSILE 880 - MIN. SHEAR 1270 - 1 1/4" MIN. EMBED. IN MASONRY
1/4" ZAMAC NAILIN BY RAWL (ZAMAC HAMMER DRIVES)
MIN. TENSILE 980 - MIN. SHEAR 1400 - 1 3/8" MIN. EMBED. IN CONCRETE
MIN. TENSILE 730 - MIN. SHEAR 1320 - 1 1/4" MIN. EMBED. IN MASONRY

ANCHORAGE TO WOOD CONSTRUCTION SHALL BE 1/4" STEEL LAGS OR LARGER WITH 1" MIN. THREAD PENETRATION, 1/4-20 BRASS WOOD BUSHINGS OR 1/4" ELCO PANEL MATES OR MASONRY SCREW WITH 1 7/8" MIN. THREAD PENETRATION.

REFER TO SHEETS 5,6 & 7 OF 7 FOR ANCHOR SPACING AND MINIMUM EMBEDMENTS

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE TO WITHSTAND THE ADDITIONAL LOADS AND INSURE PROPER ANCHORAGE.

EACH PANEL SHALL BEAR A PERMANENT LABEL OR STAMP SHOWING " SHUTTER TECH, INC. HIALEAH, FL " " DADE COUNTY PRODUCT CONTROL APPROVED "

WARNING TO OWNER OR TENANT LOCATED IN EACH HEADER OR ONE PANEL OF EACH OPENING, STATING " STORM PANELS WILL NOT OFFER HURRICANE PROTECTION UNLESS ALL REINFORCING STRAPS OR BOLTS ARE PROPERLY INSTALLED, WHEN REQURED "

PERMANENT FASTENER COMPONENTS, EMBEDDED ANCHOR BOLTS, THREADED CONES OR METAL SHIELDS, NOT IN USE, MUST BE PROTECTED AGAINST CORROSION, CONTAMINATION AND DAMAGE AT ALL TIME.

BUILDING CODE COMPLIANCE

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 15-0714.23
Expiration Date 03/22/2017
By
Miami Dade Product Control

ROBERT S. MONSOUR, PE
EB-0006024
RAMS ENGINEERING, INC.

REVISIONS	BY
03/20/98	SP
12/15/00	SP
01/17/01	SP
01/05/06	SP
01/16/14	SP
09/29/15	SP

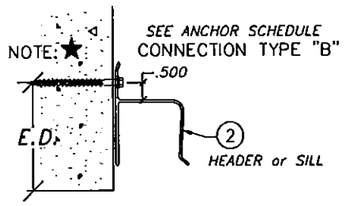
RAMS ENGINEERING, INC.
Structural Design
2100 W. 76th STREET, SUITE 311
HIALEAH, FLORIDA 33016
EB 0006024

MAXIMUM IMPACT .031 STEEL STORM PANEL

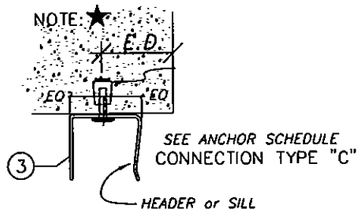
SHUTTER-TECH, INC.
7485 W. SECOND CT. HIALEAH, FL 33014

DRAWN	SEP/JRB
APPROVED	
DATE	01/10/98
SCALE	SHOWN
JOB	98001
SHEET	1
OF	7 SHEETS

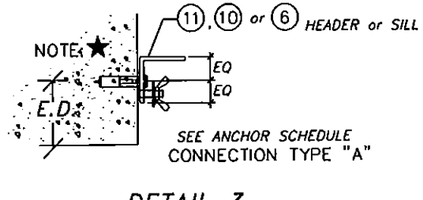
MAXIMUM IMPACT STORM PANEL



DETAIL 1



DETAIL 2



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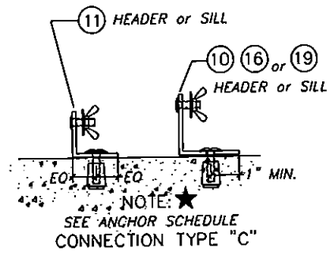

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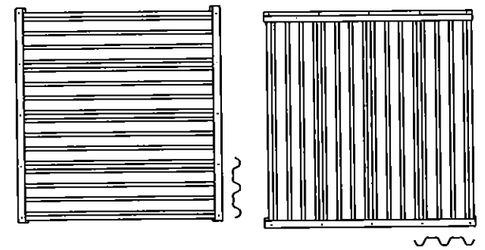
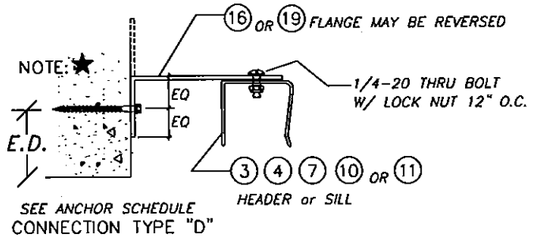
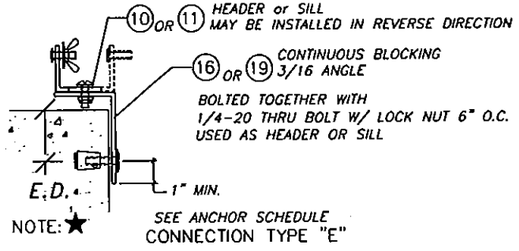
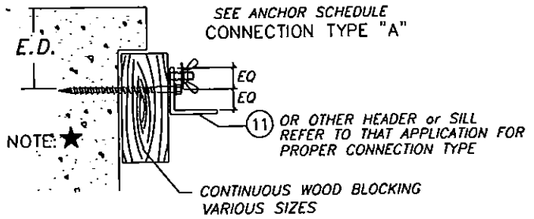




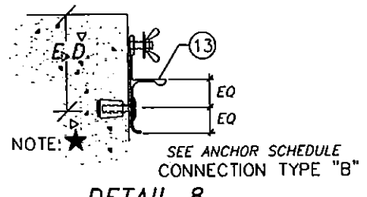
DETAIL 5



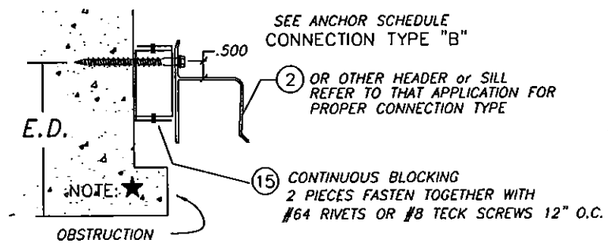
DETAIL 6



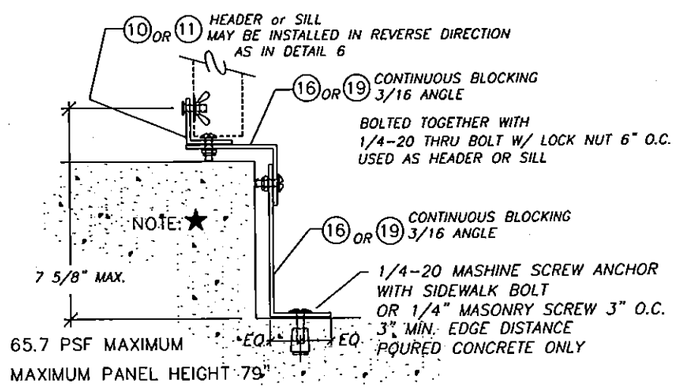
DETAIL 7



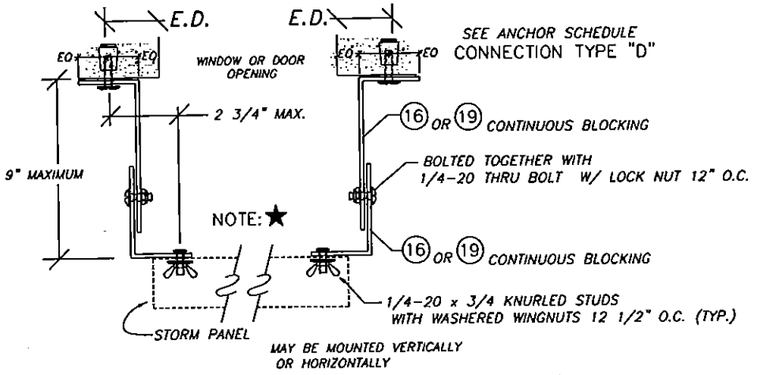
DETAIL 8



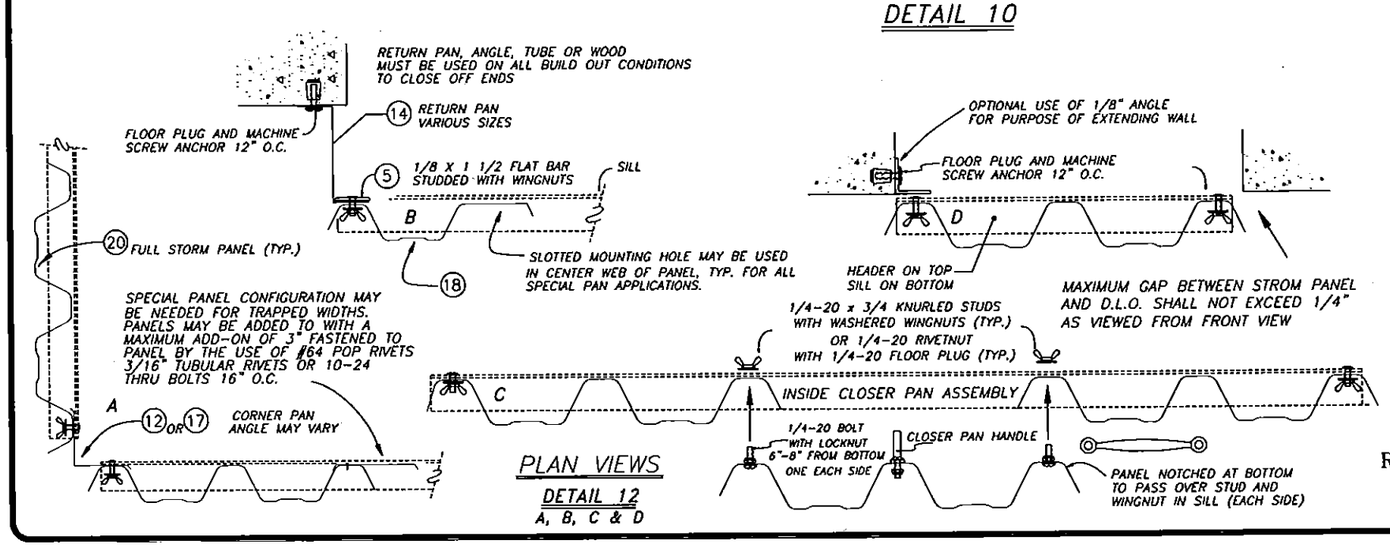
DETAIL 9



DETAIL 10



DETAIL 11



PLAN VIEWS
DETAIL 12
A, B, C & D

NOTE: ★

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE TO WITH STAND THE ADDITIONAL LOADS AND INSURE PROPER ANCHORAGE. SHUTTER SYSTEM MAY BE INTSALL INTO WOOD, CONCRETE, MASONRY.

WHEN ANCHORING TO WOOD, THE WOOD MUST BE A MINIMUM 2 X 4 EQUAL TO #2 SOUTHERN PINE WITH 0.55 SPECIFIC GRAVITY AND STRUCTURALLY PART OF THE FRAMING STRUCTURE OR SUCURELY ATTACHED TO FRAMING STRUCTURE

ROBERT S. MONSOUR, PE
EB-0006024
RAMMS ENGINEERING, INC.

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 15-0714.23
Expiration Date 03/22/2017
By
Miami Dade Product Control

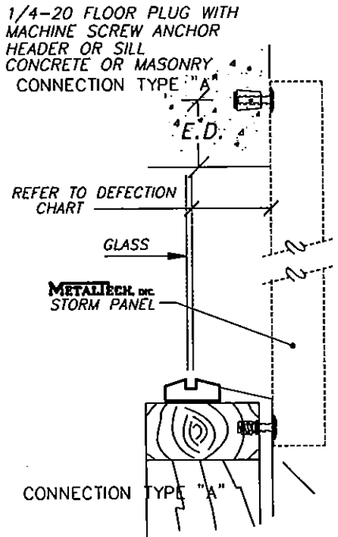
BUILDING CODE COMPLIANCE

REVISIONS	BY
03/20/98	SP
01/17/01	SP
01/06/06	SP
01/16/14	SP

RAMMS ENGINEERING, INC.
Structural Design
2100 W. 76th STREET, SUITE 311
HIALEAH, FLORIDA 33016
EB 0006024

MAXIMUM IMPACT .031 STEEL STORM PANEL
SHUTTER-TECH, INC.
7485 W. SECOND CT. HIALEAH, FL 33014

DR	SEP / JRB / RSM
APPROVED	
DATE	01/10/98
SCALE	SHOWN
JOB	98001
SHEET	2
OF	7



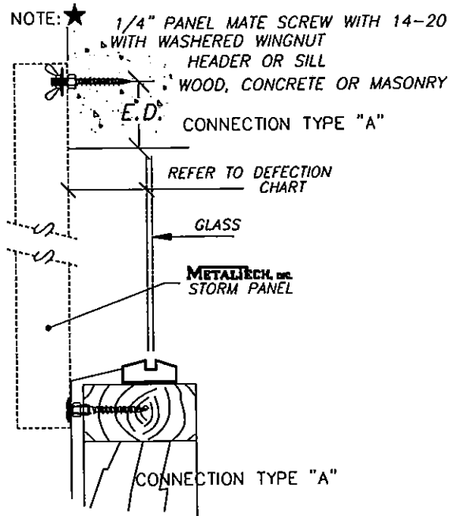
1/4-20 FLOOR PLUG WITH
1/4-20 BRASS WOOD BUSHING
HEADER OR SILL INTO WOOD

NOTE:

THE METALTECH STORM PANEL MAY BE INSTALLED WITHOUT THE USE OF AN EXTRUDED HEADER OR SILL.
THE SHUTTER MAY BE ANCHORED DIRECTLY TO THE STRUCTURE WITH THE USE OF ONE OR A COMBINATION OF DETAIL 13

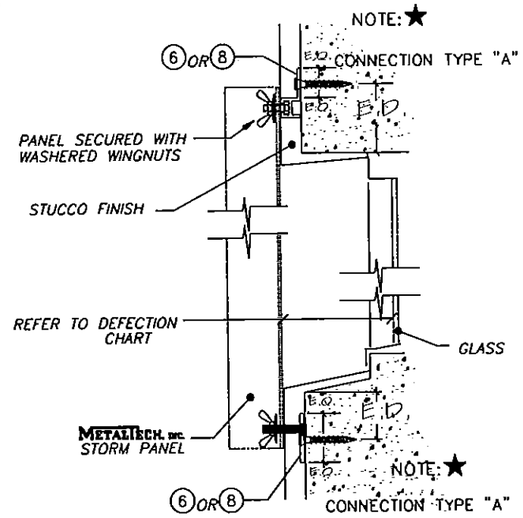
NOTE:★

DETAIL 13



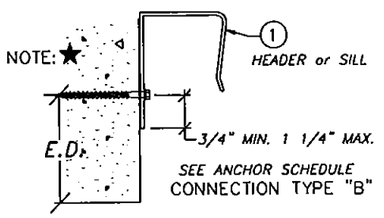
1/4 " PANEL MATE WITH MACHINE SCREW HEAD
WITH 14-20 SIDEWALK BOLT
HEADER OR SILL

WOOD, CONCRETE OR MASONRY

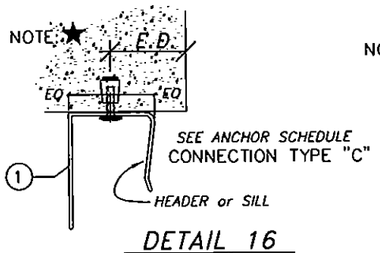


PRESTUCCO INSTALLATION

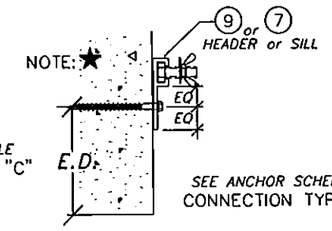
DETAIL 14



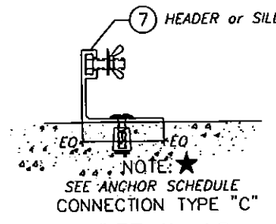
DETAIL 15



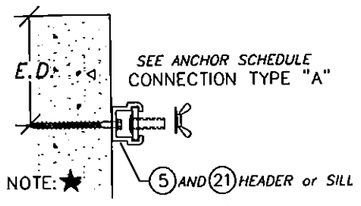
DETAIL 16



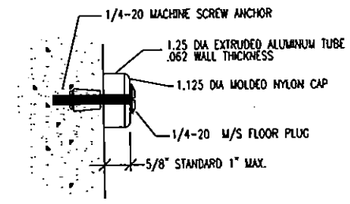
DETAIL 17



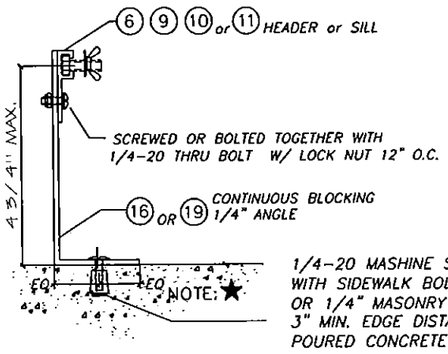
DETAIL 18



DETAIL 19



DETAIL 20



1/4-20 MASHINE SCREW ANCHOR
WITH SIDEWALK BOLT
OR 1/4" MASONRY SCREW 3" O.C.
3" MIN. EDGE DISTANCE
POURED CONCRETE ONLY

59.5 PSF MAXIMUM / PANEL HEIGHT 109" MAXIMUM

DETAIL 21

ADJUSTABLE HEADER OR SILL

NOTE:★

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WHEN ANCHORING TO WOOD, THE WOOD MUST BE A MINIMUM 2 X 4 EQUAL TO #2 SOUTHERN PINE WITH 0.55 SPECIFIC GRAVITY AND STRUCTURALLY PART OF THE FRAMING STRUCTURE OR SUCURELY ATTACHED TO FRAMING STRUCTURE

9/30/15

ROBERT S. MONSOUR, PE
EB-0006024
RAMMS ENGINEERING, INC.

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 15-0714.23
Expiration Date 03/22/2017
By
Miami Dade Product Control

BUILDING CODE COMPLIANCE

MAXIMUM IMPACT® STORM PANEL

REVISIONS	BY
03/20/98	SP
01/17/01	SP
01/11/02	SP
01/06/06	SP
01/16/14	SP

RAMMS ENGINEERING, INC.
Structural Design
2100 W. 76th STREET, SUITE 311
HIALEAH, FLORIDA 33016
EB 0006024

MAXIMUM IMPACT .031 STEEL STORM PANEL

SHUTTER-TECH, INC.
7485 W. SECOND CT. HIALEAH, FL 33014

DRN SEP / JRB / RSM
APPROVED
DATE 01/10/97
SCALE SHOWN
JOB 98001
SHEET 3
OF 7

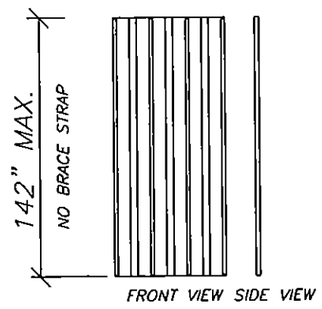
.031 STEEL MAXIMUM IMPACT STORM PANEL

24 ga. STEEL

DESIGN PRESSURE	PANEL SPAN
21.93	142"
25.51	139"
29.99	136"
35.36	132"
37.44	130"
39.10	129"
40.77	127"
44.40	124"
47.81	123
51.23	119"
58.06	112"
61.47	109"
66.85	104"
71.46	100"
75.30	95"
81.45	88"
86.83	82"
91.44	78"

USE 59.5 P.S.F. COLUMN AND 124" PANEL SPAN ON ANCHOR SCHEDULE FOR ANCHOR SPACING FOR SPANS OVER 124"

THE METALTECH STORM PANELS MAY BE INSTALLED WITH OR WITHOUT THE HORIZONTAL BRACE STRAP. REFER TO PANEL DEFLECTION CHARTS.

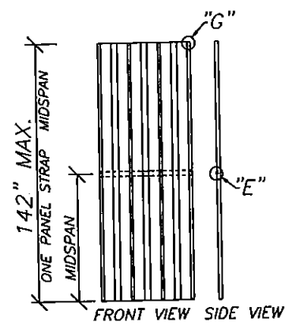


142" MAX. PANEL HEIGHT
NO PANEL STRAP IS REQUIRED

HIGH VOLOCITY HURRICANE ZONE
PANEL DEFLECTION CHART
WITHOUT HORIZONTAL STRAP

PANEL HEIGHT	0"-90"	90"-142"
WALL MOUNT	2 5/8"	3 1/2"
INSIDE MOUNT	2 5/8"	3 1/2"
BUILD OUT	2 5/8"	3 1/2"

MINIMUM DISTANCE BETWEEN GLASS AND PANEL



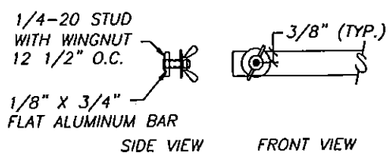
142" MAX. PANEL HEIGHT
ONE PANEL STRAP LOCATED MIDSPAN

HIGH VOLOCITY HURRICANE ZONE
PANEL DEFLECTION CHART
WITH HORIZONTAL STRAP

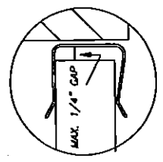
PANEL HEIGHT	0"-104"	104"-142"
WALL MOUNT	2"	2 1/4"
INSIDE MOUNT	2"	2 1/4"
BUILD OUT	2"	2 1/4"

MINIMUM DISTANCE BETWEEN GLASS AND PANEL

HORIZONTAL BRACE STRAP



DETAIL "E"

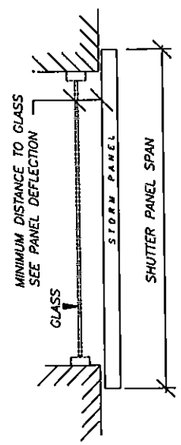


MAXIMUM GAP BETWEEN PANEL AND HEADER IS 1/4" (TYP.)

DETAIL "F"

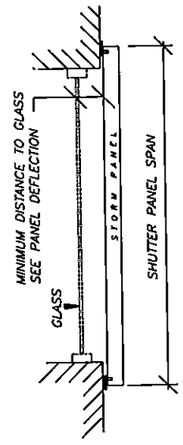
HEADER AND SILL TYPE MAY VARY, DEPENDING ON APPLICATION

DETAIL 13 ON SHEET 3



DETAIL 13 ON SHEET 3

DETAIL 3,4, & 8 ON SHEET 2

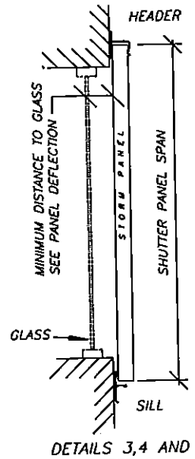


DETAIL 3,4, & 8 ON SHEET 2

WALL MOUNT

ANCHORING PANEL TOP & BOTTOM WITH STUDDED HDR/SILL

DETAIL 1 ON SHEET 2
DETAIL 15 ON SHEET 3

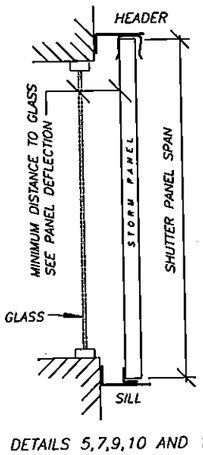


DETAILS 3,4 AND 8 ON SHEET 2

WALL MOUNT

WITH HDR. AND SILL

DETAILS 5,7,9,10 AND 11 ON SHEET 2

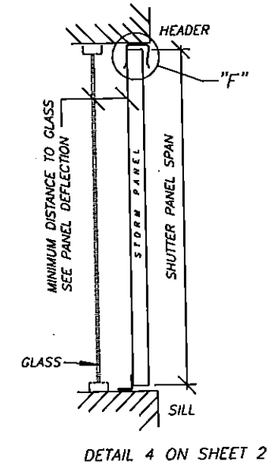


DETAILS 5,7,9,10 AND 11 ON SHEET 2

BUILD OUT

WITH HDR. AND SILL

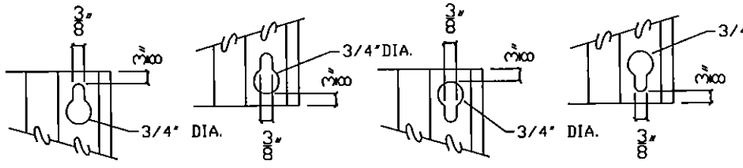
DETAIL 2 ON SHEET 2
DETAIL 16 ON SHEET 3



DETAIL 4 ON SHEET 2

INSIDE MOUNT

WITH HDR. AND SILL

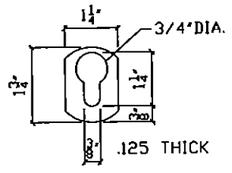


FASTENER MUST BE IN NORROW PORTION OF KEY HOLE, IF NOT A KEY HOLE WASHER SHOULD BE USED

MOUNTING HOLE MAY ALSO BE A 9/16" DIA. CIRCLE

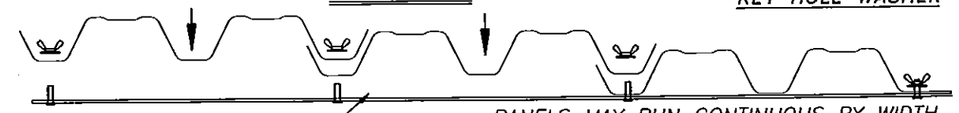
WALL MOUNT

ANCHORING PANEL TOP & BOTTOM NO HDR. OR SILL



KEY HOLE WASHER

DETAIL "G"



HORIZONTAL BRACE STRAP HEADER AND SILL

PANELS MAY RUN CONTINUOUS BY WIDTH EITHER HORIZONTALLY OF VERTICALLY

EXPLODED ASSEMBLY

TYPICAL SECTION VIEWS

ROBERT S. MONSOUR, PE
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RAMMS ENGINEERING, INC.

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REVISIONS	BY
03/20/98	SP
12/04/00	SP
01/17/01	SP
09/09/02	SP
01/16/14	SP

RAMMS ENGINEERING, INC.
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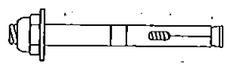
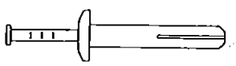
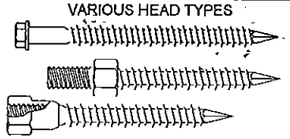
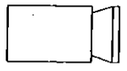
MAXIMUM IMPACT .031 STEEL STORM PANEL

SHUTTER-TECH, INC.
7485 W. SECOND CT. HIALEAH, FL 33014

DRAWN	SEP/JRB
APPROVED	
DATE	01/10/98
SCALE	SHOWN
JOB	98001
SHEET	4
OF	7

ANCHOR SCHEDULE

ANCHOR SPACING vs DESIGN PRESSURE AND CONNECTION TYPE			UP TO 59.6 PSF										UPTO 71.5 PSF									
			POURED CONCTETE					CONCRETE BLOCK					POURED CONCTETE					CONCRETE BLOCK				
			CONECTION TYPE					CONECTION TYPE					CONECTION TYPE					CONECTION TYPE				
ANCHOR TYPE	PANEL	E.D.	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
 1/4" RAWL LOK/BOLT (SLEEVE ANCHOR) 1 1/8" MIN. EMBEDMENT	68" SPAN	3"	16	13	8	13	13	16	13	10	13	13	16	13	7	13	13	16	13	8	13	13
		2"	16	13	7	13	13	16	13	8	13	13	16	13	5	13	13	16	13	6	13	13
		1 1/4"	16	13	5	13	13	16	13	6	13	13	14	13	4	13	13	14	13	4	13	13
	88" SPAN	3"	16	13	6	13	13	16	13	7	13	13	14	6	5	9	10	14	6	6	9	10
		2"	15	11	5	13	13	15	11	6	13	13	12	6	4	8	9	12	6	5	8	9
		1 1/4"	13	10	4	13	13	13	10	5	13	13	11	5	3	7	8	11	5	4	7	8
	105" span	3"	14	6	5	9	10	14	7	6	9	10	11	4	4	5	4	12	4	5	5	4
		2"	12	6	4	8	9	12	6	5	8	9	10	4	4	5	4	10	4	4	5	4
		1 1/4"	11	5	3	7	8	11	5	4	7	8	9	3	3	4		9	3	3	4	
	123" span	3"	11	4	4	5	4	12	4	5	5	4										
		2"	10	4	4	5	4	10	4	4	5	4										
		1 1/4"	9	3	3	4	3	9	3	3	4	3										
 1/4" RAWL ZAMAC NAILIN DRIVE (HAMMER DRIVE) 1 3/8" MIN. EMBEDMENT IN CONCRETE 1 1/4" MIN. EMBEDMENT IN BLOCK	68" SPAN	3"	16	13	7	13	13	13	13	6	13	13	15	13	6	13	13	11	11	5	11	11
		2"	15	13	6	13	13	12	12	5	12	12	13	13	5	13	13	10	10	4	10	10
		1 1/4"	14	13	5	13	13	10	10	4	10	10	12	12	4	12	12	9	9	3	9	9
	88" SPAN	3"	13	10	6	13	13	10	8	5	10	10	11	5	5	7	8	8	4	4	5	6
		2"	12	9	5	12	12	9	7	4	9	9	10	5	4	6	7	7	3	3	5	5
		1 1/4"	11	8	4	11	11	8	6	3	8	8	9	4	3	6	6	7	3	3	4	5
	105" span	3"	11	5	5	7	8	8	4	4	5	6	9	3	4	4	3	7		3	3	3
		2"	10	5	4	7	7	7	4	3	5	6	8	3	3	4	3	6		3	3	
		1 1/4"	9	4	3	6	7	7	3	3	4	5	8	3	3	4	3	6		3		
	123" span	3"	9	3	4	4	3	7		3	3	3										
		2"	8	3	3	4	3	6		3	3											
		1 1/4"	8	3	3	4	3	6			3											
VARIOUS HEAD TYPES  (MASONRY SCREWS) 1/4" RAWL PERMA-SEAL TAPPER 1/4" ELCO PANEL MATES 1 1/2" MIN. EMBEDMENT IN CONCRETE 1 1/4" MIN. EMBEDMENT IN BLOCK	68" SPAN	3"	16	13	11	13	13	16	13	7	13	13	16	13	9	13	13	13	13	6	13	13
		2"	16	13	9	13	13	14	13	6	13	13	16	13	8	13	13	12	12	5	12	12
		1 1/4"	16	13	8	13	13	13	13	5	13	13	16	13	6	13	13	10	10	4	10	10
	88" SPAN	3"	16	13	9	13	13	12	9	5	12	12	16	8	7	11	12	10	5	4	6	7
		2"	16	13	7	13	13	11	8	4	11	11	15	7	6	10	11	9	4	4	6	6
		1 1/4"	16	13	6	13	13	10	7	4	10	10	14	7	5	9	10	8	4	3	5	6
	105" span	3"	16	8	7	11	13	10	5	4	7	8	15	5	6	7	5	8	3	4	4	3
		2"	16	7	6	10	12	9	4	4	6	7	13	5	5	6	5	8	3	3	4	3
		1 1/4"	14	7	5	9	10	8	4	3	5	6	12	4	4	5	4	7			3	3
	123" span	3"	15	5	6	7	5	8	3	4	4	3										
		2"	13	5	5	6	5	8	3	3	4	3										
		1 1/4"	12	4	4	5	4	7			3	3										
 1/4-20 x 7/8" , 1/2" DIA. RAWL CALK-IN (MACHINE SCREW ANCHOR) 7/8" MIN. EMBEDMENT	68" SPAN	3"	16	13	12	13	13	16	13	7	13	13	16	13	10	13	13	13	13	6	13	13
		2.5"	16	13	10	13	13	14	13	6	13	13	16	13	9	13	13	12	12	5	12	12
		2"	16	13	8	13	13	13	13	5	13	13	16	13	7	13	13	10	10	4	10	10
	88" SPAN	3"	16	13	9	13	13	12	9	5	12	12	16	10	8	13	13	10	5	4	6	7
		2.5"	16	13	8	13	13	11	8	5	11	11	16	9	7	12	13	9	4	4	6	6
		2"	16	13	6	13	13	10	7	4	10	10	16	8	5	11	12	8	4	3	5	6
	105" span	3"	16	10	8	13	13	10	5	4	7	8	16	6	7	8	3	8	3	4	4	3
		2.5"	16	9	7	13	13	9	4	4	6	7	16	6	6	8	3	8	3	3	4	3
		2"	16	8	5	11	13	8	4	3	5	6	14	5	4	7	3	7		3	3	3
	123" span	3"	16	6	7	8	7	8	3	4	4	3										
		2.5"	16	6	6	8	6	8	3	3	4	3										
		2"	14	5	4	7	5	7		3	3	3										

NOTES:

SPANS AND LOADS SHOWN IN THIS SCHEDULE ARE FOR DETERMINING ANCHOR SPACING ONLY. FOR ALLOWABLE SPANS VS. DESIGN LOADS REFER TO SHEET 4.

MINIMUM ENBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO AND/OR WALL FINISHES.

SHADED AREAS REPRESENT ANCHOR CONDITIONS THAT ARE NOT ACCEPTABLE.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE TO WITH STAND THE ADDITIONAL LOADS AND INSURE PROPER ANCHORAGE. SHUTTER SYSTEM MAY BE INTSALL INTO WOOD, CONCRETE OR MASONRY .

REVISIONS	BY
03/20/98	SP
12/15/00	SP
01/17/01	SP
01/05/06	SP
01/16/14	SP

RAMMS ENGINEERING, INC.
Structural Design
2100 W. 76th STREET, SUITE 311
HIALEAH, FLORIDA 33016
EB 0006024

MAXIMUM IMPACT .031 STEEL STORM PANEL
SHUTTER-TECH, INC.
7485 W. SECOND CT. HIALEAH, FL 33014

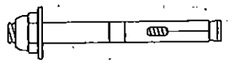
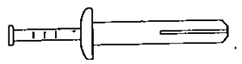
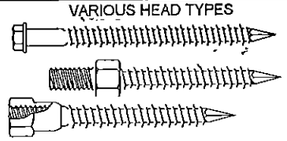
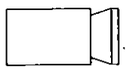
DRAWN SEP/JRB
APPROVED
DATE 01/10/98
SCALE SHOWN
JOB 98001
SHEET 5 OF 7 SHEETS

BUILDING CODE COMPLIANCE

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 15-0714.23
Expiration Date 03/22/2017
By
Miami Dade Product Control

ROBERT S. MONSOUR, PE
EB-0006024
RAMMS ENGINEERING, INC.

ANCHOR SCHEDULE

ANCHOR SPACING vs DESIGN PRESSURE AND CONNECTION TYPE			UP TO 81.5 PSF										UPTO 91.4 PSF									
			POURED CONCTETE					CONCRETE BLOCK					POURED CONCTETE					CONCRETE BLOCK				
			CONECTION TYPE					CONECTION TYPE					CONECTION TYPE					CONECTION TYPE				
ANCHOR TYPE	PANEL	E.D.	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
 1/4" RAWL LOK/BOLT (SLEEVE ANCHOR) 1 1/8" MIN. EMBEDMENT	68" SPAN	3"	15	10	6	13	13	16	10	7	13	13	13	7	5	9	11	13	7	6	9	11
		2"	14	9	5	13	13	14	9	6	13	13	12	6	4	8	9	12	6	5	8	10
		1 1/4"	12	8	4	12	12	12	8	4	12	12	11	5	3	7	9	11	5	4	7	9
	88" SPAN	3"	12	4	5	6	5	12	5	5	6	5	11	3	4	5	3	11	4	5	5	3
		2"	11	4	4	5	4	11	4	4	5	5	9	3	3	4	3	10	3	4	4	3
		1 1/4"	10	4	3	5	4	10	4	3	5	4	9	3	3	4	3	9	3	3	4	3
	105" span	3"																				
		2"																				
		1 1/4"																				
	123" span	3"																				
		2"																				
		1 1/4"																				
 1/4" RAWL ZAMAC NAILIN DRIVE (HAMMER DRIVE) 1 3/8" MIN. EMBEDMENT IN CONCRETE 1 1/4" MIN. EMBEDMENT IN BLOCK	68" SPAN	3"	13	8	5	12	13	9	6	4	9	9	11	5	5	8	9	8	4	4	6	7
		2"	11	7	5	11	11	8	5	4	8	8	10	5	4	7	8	8	4	3	5	6
		1 1/4"	10	7	4	10	10	8	5	3	7	8	9	4	3	6	7	7	3	3	4	5
	88" SPAN	3"	10	4	4	5	4	7	3	3	4	3	9	3	4	4	3	7		3	3	
		2"	9	3	3	4	4	7		3	3	3	8	3	3	3		6		3		
		1 1/4"	8	3	3	4	3	6			3		7		3	3		5				
	105" span	3"																				
		2"																				
		1 1/4"																				
	123" span	3"																				
		2"																				
		1 1/4"																				
VARIOUS HEAD TYPES  (MASONRY SCREWS) 1/4" RAWL PERMA-SEAL TAPPER 1/4" ELCO PANEL MATES 1 1/2" MIN. EMBEDMENT IN CONCRETE 1 1/4" MIN. EMBEDMENT IN BLOCK	68" SPAN	3"	16	13	8	13	13	11	7	5	11	11	16	8	7	12	13	10	5	4	7	8
		2"	16	11	7	13	13	10	6	4	10	10	16	8	6	10	12	9	4	4	6	7
		1 1/4"	16	10	6	13	13	9	6	3	9	9	14	7	5	9	11	8	4	3	5	6
	88" SPAN	3"	15	6	6	8	6	9	3	4	4	4	14	4	6	6	4	8	3	3	3	3
		2"	14	5	5	7	6	8	3	3	4	3	12	4	5	5	4	7		3	3	
		1 1/4"	12	5	4	6	5	7	3	3	4	3	11	4	4	5	3	6			3	
	105" span	3"																				
		2"																				
		1 1/4"																				
	123" span	3"																				
		2"																				
		1 1/4"																				
 1/4-20 x 7/8" , 1/2" DIA. RAWL CALK-IN (MACHINE SCREW ANCHOR) 7/8" MIN. EMBEDMENT	68" SPAN	3"	16	13	9	13	13	11	7	5	11	11	16	10	8	13	13	10	5	4	7	8
		2.5"	16	13	7	13	13	10	7	4	10	10	16	9	7	13	13	9	4	4	6	7
		2"	16	12	6	13	13	9	6	3	9	9	16	8	5	12	13	8	4	3	5	6
	88" SPAN	3"	16	7	7	9	8	9	3	4	4	4	16	5	6	7	5	8	3	3	3	3
		2.5"	16	6	6	8	7	8	3	3	4	3	15	5	5	6	5	7		3	3	
		2"	15	6	4	8	6	7	3	3	4	3	13	4	4	6	4	6			3	
	105" span	3"																				
		2.5"																				
		2"																				
	123" span	3"																				
		2.5"																				
		2"																				

NOTES:

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REVISIONS	BY
03/20/98	SP
01/17/01	SP
01/05/06	SP
01/16/14	SP

RAMS ENGINEERING, INC.
Structural Design
2100 W. 76th STREET, SUITE 311
HIALEAH, FLORIDA 33016
EB 0006024

MAXIMUM IMPACT .031 STEEL STORM PANEL

SHUTTER-TECH, INC.
7485 W. SECOND CT. HIALEAH, FL 33014

Drawn SEP/JRB/RSM
Approved
Date 01/10/98
Scale SHOWN
Job 98001
Sheet 6 of 7 Sheets

9/30/15

ROBERT S. MONSOUR, PE
EB-0006024
RAMS ENGINEERING, INC.

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 15-0714.23
Expiration Date 03/22/2017
By Miami Dade Product Control

BUILDING CODE COMPLIANCE

ANCHOR SCHEDULE

WOOD APPLICATIONS			UP TO 59.5 PSF CONNECTION TYPE					UP TO 71.5 PSF CONNECTION TYPE					UP TO 81.5 PSF CONNECTION TYPE					UP TO 91.4 PSF CONNECTION TYPE				
ANCHOR TYPE	DIA.	SPAN	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
BRASS WOOD BUSHING 1" MIN. PENETRATION	1/4-20	68" SPAN	14	13	5	13	13	12	12	5	12	12	10	7	4	10	10	9	4	4	6	7
		88" SPAN	11	8	4	11	11	9	4	3	6	7	8	3	3	4	3	7		3	3	
		105" SPAN	9	4	4	6	7	8	3	3	4	3										
		123" SPAN	8	3	3	4	3															
WOOD LAGS 1" MINIMUM TREAD PENETRATION	1/4"	68" SPAN	16	13	8	13	13	15	13	6	13	13	14	9	6	13	13	12	6	5	8	9
		88" SPAN	14	11	6	13	13	12	6	5	8	9	10	4	4	5	4	9	3	4	4	3
		105" SPAN	12	6	5	8	9	10	4	4	5	4										
		123" SPAN	10	4	3	5	4															
WOOD LAGS 1" MINIMUM TREAD PENETRATION	5/16"	68" SPAN	16	13	10	13	13	16	13	8	13	13	16	10	7	13	13	14	7	6	9	11
		88" SPAN	16	13	7	13	13	14	7	6	9	10	12	5	5	6	5	11	4	5	5	3
		105" SPAN	14	7	6	9	10	12	4	5	6	4										
		123" SPAN	12	4	5	6	4															
WOOD LAGS 1" MINIMUM TREAD PENETRATION	3/8"	68" SPAN	16	13	11	13	13	16	13	9	13	13	16	12	8	13	13	16	8	7	11	13
		88" SPAN	16	13	9	13	13	16	8	7	10	12	14	5	6	7	6	13	4	6	5	4
		105" SPAN	16	8	7	11	12	14	5	6	6	5										
		123" SPAN	13	5	6	6	5															
WOOD LAGS 1" MINIMUM TREAD PENETRATION	7/16	68" SPAN	16	13	12	13	13	16	13	10	13	13	16	13	9	13	13	16	9	8	12	13
		88" SPAN	16	13	9	13	13	16	8	8	12	13	16	6	7	8	7	14	5	6	6	4
		105" SPAN	16	9	8	12	13	15	5	7	7	6										
		123" SPAN	15	5	7	7	6															
1/4" ELCO PANEL MATES 1 7/8" MIN. THREAD PENETRATION	1/4"	68" SPAN	16	13	8	13	13	15	13	6	13	13	14	9	6	13	13	12	6	5	8	9
		88" SPAN	14	11	6	13	13	12	6	5	8	9	10	4	4	5	4	9	3	4	4	3
		105" SPAN	12	6	5	8	9	10	4	4	5	4										
		123" SPAN	10	4	3	5	4															
1/4" ELCO PANEL MATES 1 7/8" MIN. THREAD PENETRATION	1/4"	68" SPAN	16	13	8	13	13	15	13	6	13	13	14	9	6	13	13	12	6	5	8	9
		88" SPAN	14	11	6	13	13	12	6	5	8	9	10	4	4	5	4	9	3	4	4	3
		105" SPAN	12	6	5	8	9	10	4	4	5	4										
		123" SPAN	10	4	3	5	4															
VERIOUS HEAD TYPES 1/4" MASONRY SCREWS 1 7/8" MIN. THREAD PENETRATION	1/4"	68" SPAN	16	13	8	13	13	15	13	6	13	13	14	9	6	13	13	12	6	5	8	9
		88" SPAN	14	11	6	13	13	12	6	5	8	9	10	4	4	5	4	9	3	4	4	3
		105" SPAN	12	6	5	8	9	10	4	4	5	4										
		123" SPAN	10	4	3	5	4															

NOTES:

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WHEN ANCHORING TO WOOD, THE WOOD MUST BE A MINIMUM 2 X 4 EQUAL TO #2 SOUTHERN PINE 0.55 SPECIFIC GRAVITY AND STRUCTURALLY PART OF THE FRAMING STRUCTURE OR SUCURELY ATTACHED TO FRAMING STRUCTURE

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9/30/15

ROBERT S. MONSOUR, PE
EB-0006024
RAMMS ENGINEERING, INC.

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 15-0714.23
Expiration Date 03/22/2017
By Miami Dade Product Control

BUILDING CODE COMPLIANCE

REVISIONS	BY
08/14/98	SP
01/17/01	SP
01/05/06	SP
01/16/14	SP

RAMMS ENGINEERING, INC.
Structural Design
2100 W. 76th STREET, SUITE 311
HIALEAH, FLORIDA 33016
EB 0006024

MAXIMUM IMPACT .031 STEEL STORM PANEL
SHUTTER-TECH, INC.
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SHEET 7 OF 7 SHEETS